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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/893,694	06/29/2001	Jae-Sung Lee	401279	4960

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EXAMINER

JOHNSON, JONATHAN J

ART UNIT PAPER NUMBER

1725

DATE MAILED: 03/18/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

<b>Office Action Summary</b>	<b>Application No.</b>	<b>Applicant(s)</b>	
	09/893,694	LEE, JAE-SUNG	
	<b>Examiner</b>	<b>Art Unit</b>	
	Jonathan Johnson	1725	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 29 June 2001.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-5 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-5 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \*    c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
  2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152)             |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)<br>Paper No(s)/Mail Date <u>12-5-02</u> . | 6) <input type="checkbox"/> Other: _____  |

## DETAILED ACTION

### *Claim Rejections - 35 USC § 102*

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1 and 5 are rejected under 35 U.S.C. 102(b) as being anticipated by Takeuchi et al. (4,519,959). Takeuchi et al. teach a device capable of acting as a liquid phase oxidation reactor having a substantially cylindrical reaction vessel having an interior space of a predetermined volume (figure 9, item 30); a lid combined with the reaction vessel on top of the reaction vessel (Figures 8 and 9, item 42); one or more stirring blades disposed within the reaction vessel and rotating by a driving source disposed on the outside of the reaction vessel (Figure 9, item 34 and M); a liquid phase supplying line disposed at a sidewall of the reaction vessel for supplying a liquid phase reactant to the reaction vessel (Figure 9, top wall); a liquid phase discharging line disposed at a sidewall of the reaction vessel for draining a product obtained through a chemical reaction out of the reaction vessel (Figure 9, item 48); a gas feed nozzle formed in a bent shape for supplying an oxygen containing gas to the reaction vessel (Figure 9, item 33); and an angle adjusting means for supporting the gas feed nozzle so that the gas feed nozzle is turned so that the outlet thereof faces one of the stirring blades or the interior sidewall of the reaction vessel (Figure 9, item 33 base).

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***Claim Rejections - 35 USC § 103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1-5 are rejected under 35 U.S.C. 103(a) as being unpatentable over Takeuchi et al. in view of Fukotome et al. (JP 61-222526). Takeuchi et al. teach a device capable of acting as a liquid phase oxidation reactor having a substantially cylindrical reaction vessel having an interior space of a predetermined volume (figure 9, item 30); a lid combined with the reaction vessel on top of the reaction vessel (Figures 8 and 9, item 42); one or more stirring blades disposed within the reaction vessel and rotating by a driving source disposed on the outside of the reaction vessel (Figure 9, item 34 and M); a liquid phase supplying line disposed at a sidewall of the reaction vessel for supplying a liquid phase reactant to the reaction vessel (Figure 9, top wall); a liquid phase discharging line disposed at a sidewall of the reaction vessel for draining a product obtained through a chemical reaction out of the reaction vessel (Figure 9, item 48); a gas feed nozzle formed in a bent shape for supplying an oxygen containing gas to the reaction vessel (Figure 9, item 33). Fukotome et al. teach another gas feed nozzle where the angle adjusting means comprises a first bearing fixed into a through hole in the reaction vessel for supporting the gas feed nozzle so that the gas feed nozzle can be turned (Figure 10, items 11 and 14); wherein the angle adjusting means further comprises a control lever fixed to the gas feed nozzle disposed on the outside of the reaction vessel and manipulated by a user's hands (Figure 6, item 16a); wherein the angle adjusting means further comprises a second bearing disposed between the gas

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feed nozzle and a gas supplying line for supplying the oxygen containing gas to the gas feed nozzle for supporting the gas feed nozzle so that the gas feed nozzle can turn with respect to the gas supplying line (Figure 19, item 11 and 14). It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the apparatus of Takeuchi et al. to utilize the rotatable nozzle of Fukotome et al. in order to enhance the stirring and mixing of the entire container (see translated abstract of Fukotome et al.).

### *Conclusion*

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jonathan Johnson whose telephone number is 571-272-1177. The examiner can normally be reached on M-Th 7AM-5:30 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Tom Dunn can be reached on 571-272-1171. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).



Jonathan Johnson  
Examiner  
Art Unit 1725